

CORNELL UNIVERSITY
OFFICIAL PUBLICATION

*New York State
College of Agriculture
at Cornell University*

THE TWO-YEAR COURSE

1955-56

THE COLLEGE OF AGRICULTURE AT CORNELL UNIVERSITY IS
A CONTRACT UNIT OF THE STATE UNIVERSITY OF NEW YORK



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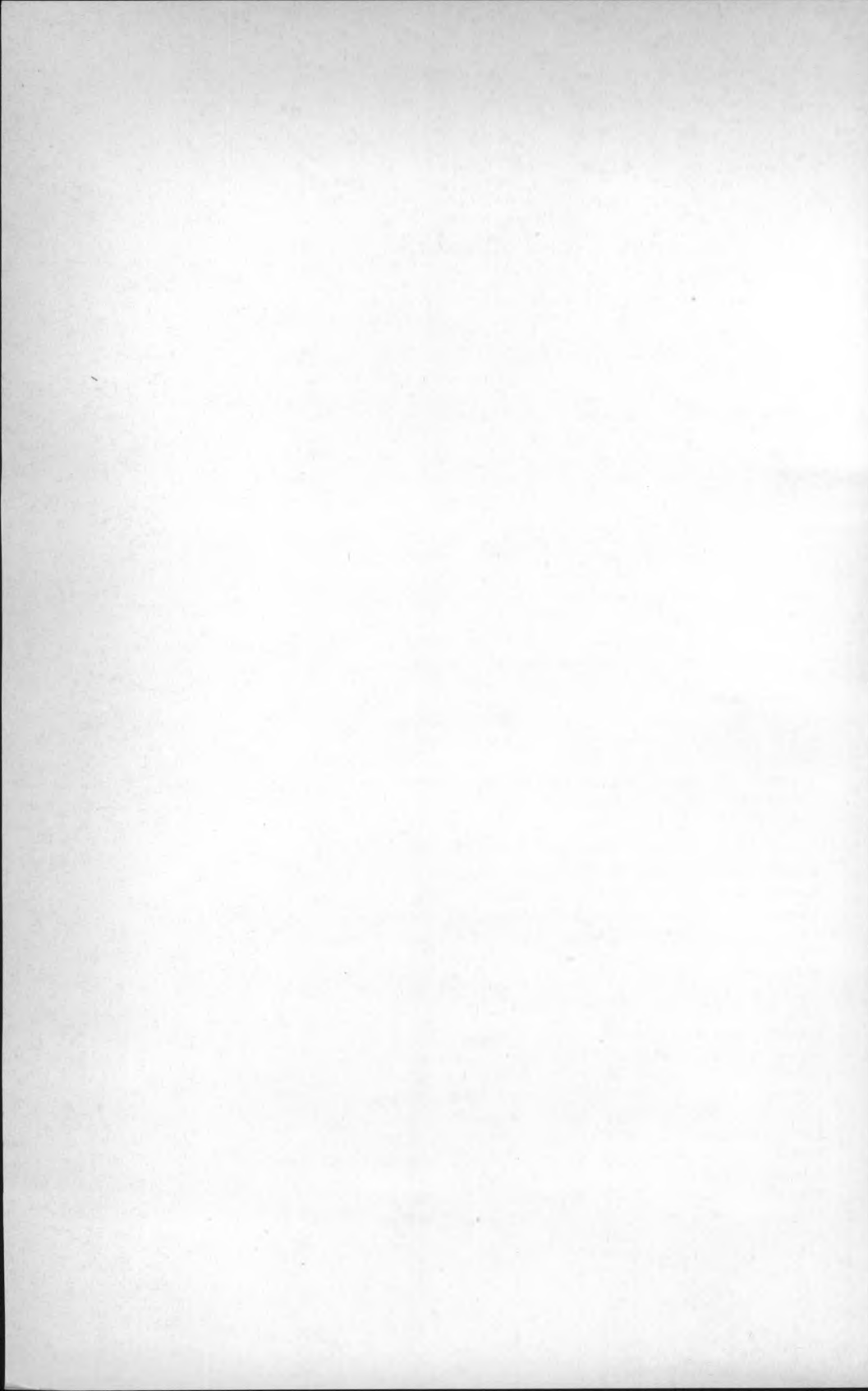
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The New York State College of Agriculture

Two-Year Course

THE NEW York State College of Agriculture, a unit of the State University of New York, is maintained by the State as one of four state colleges or schools within Cornell University. It is equipped with a staff and facilities to teach resident students, to make investigations in all phases of agriculture and the underlying sciences, and to disseminate its teachings to the people of the State. The support of the State towards these ends is supplemented by substantial appropriations from the Federal Government, and by the land and other large facilities and services placed at the disposal of the College by Cornell University.

GENERAL INFORMATION

THE COURSES AVAILABLE

The information contained in this Announcement relates to the two-year course. This is designed for young men who expect to go into farming or into business closely allied thereto, and who desire agricultural training of college grade, but cannot devote more than two years to it. The College offers, in addition, a summer session of six weeks; a four-year course, leading to the degree of Bachelor of Science; and graduate courses, leading to higher degrees. These offerings give preparation for different kinds and different levels of agricultural vocations and call for different prerequisites for admission. A separate printed Announcement of each of these courses is available on application to the Secretary of the College of Agriculture, Roberts Hall, Ithaca, New York.

REQUIREMENTS FOR ADMISSION

For admission to the two-year course, candidates must offer:

Sixteen units acceptable to Cornell University in subjects credited by the University of the State of New York toward a state diploma, or in the case of applicants whose secondary-school training has been outside New York State, the equivalent by school certificates. It is recommended that at least 1 unit shall be in mathematics.

Approximately one year of practical experience on a farm or in a business related to the curriculum to be offered.

All students matriculating in the University must present a satisfactory certificate of vaccination against smallpox. This certificate is considered satisfactory only if it certifies to a successful vaccination within five years or certifies that at least three unsuccessful attempts have been made within the same period.

THE APPLICATION FOR ADMISSION

Candidates for admission should address the Director of Admissions, Edmund Ezra Day Hall, Ithaca, New York, stating that they desire to enter the two-year course in the College of Agriculture. This should be done as early as possible, in the senior year of secondary school, because it often takes considerable time to procure the necessary credentials.

CERTIFICATION ON COMPLETION OF COURSE

Students who satisfactorily complete the work of an approved two-year course with credit for at least sixty hours will be granted an appropriate certificate.

RELATION TO FOUR-YEAR COURSE

Except in respect to the items of administration and curriculum specifically covered in this Announcement, students in this course are governed by exactly the same conditions as are students of the four-year course. They should, therefore, consult the Announcement of the latter course for further details of information and for the description of courses open to their election but not here listed or described.

Transfer to the degree course will be possible at the end of one of these curricula for those who have given evidence of ability to carry advanced work. Students who qualify for such transfer will not be required to offer any further entrance credit. The transfer is possible solely on a basis of the record and on completion of the curriculum. The record must be considerably better than average. Students who transfer to the four-year course are given full credit toward the degree for work satisfactorily passed in the two-year course.

Two-year students are registered as special students and are not eligible to represent the University in intercollegiate athletics.

EXPENSES

TUITION

Tuition is free to two-year students in the New York State College of Agriculture, who at the time of their admission are, and for at least twelve months prior thereto have been, bona-fide residents of the State of New York. A student transferring from one college or course in the University to another must pay, for the hours' credit he receives in the latter college or course, an amount corresponding to the difference in

tuition, and no such transfer is allowed or credit given until such payment has been made.

Students in agriculture who are not exempt under these provisions are required to pay \$150 a term. Tuition and other fees become due when the student registers. The University allows twenty days of grace after the last registration day of each term of the regular session. The last day of grace is printed on the registration card which the student is required to present at the Treasurer's office. Any student, graduate or undergraduate, except as hereinafter provided, who fails to pay his tuition, fees, and other indebtedness or if entitled to free tuition fails to claim the same at the Treasurer's office and pay his other fees, within the time prescribed by the University, is thereby dropped from the University. When in his judgment the circumstances in a particular case so warrant, the Treasurer may allow an extension of time to complete payments. For such extension, the students will be assessed a fee of \$2. A reinstatement fee of \$5 will be assessed any student who is permitted to continue or return to classes after being dropped from the University for default in payments. For reasons satisfactory to the Treasurer and the Registrar, which must be presented in writing, the above assessment may be waived in any individual case. If the student withdraws, University fees are charged on the basis of 10 per cent for each week or fraction thereof in attendance.

Any tuition or other fee may be changed by the Board of Trustees to take effect at any time without previous notice.

OTHER FEES

A deposit of \$45 must be made after the applicant has received notice of provisional acceptance. At the time of the first registration in the University, the deposit is used to cover matriculation charges, provides for certain graduation expenses, and establishes a fund for undergraduate and alumni class activities.

A deposit of \$30 is required for a uniform, payable at registration in the first term, in the Basic Course in Military Science. Most of this deposit is returned as earned uniform allowance upon completion of the Basic Course.

A University and College Composite Fee of \$77.50 is required of every student at the beginning of each term. This fee covers the following services: (1) *Health services and medical care.* These services are centered in the University Clinic or out-patient department and in Cornell Infirmary or hospital. Students are entitled to unlimited visits at the Clinic; laboratory and X-ray examinations indicated for diagnosis and treatment; hospitalization in the Infirmary with medical care for a maximum of fourteen days each term and emergency surgical care. The cost for these services is included in the College and University general fee. For further details, including charges for special services,

see the *General Information Announcement*. (2) *Willard Straight Hall membership*. Willard Straight Hall is the student union; each student shares in the common privileges afforded by the operation of Willard Straight Hall, subject to regulations approved by the Board of Managers of the Hall. (3) *Laboratory services* for courses taken in the State Colleges. (4) *University administration and endowed college laboratory services*. (5) *Physical recreation*. Each male student is entitled to the use of the gymnasium and the university playgrounds, and to the use of a locker, bathing facilities, and towels in Teagle Hall, Barton Hall, or the Schoellkopf Memorial Building; and each woman student to the use of the women's gymnasium, recreation rooms, and playgrounds, and to the use of a locker. (6) *Student activities*. The fee helps to provide funds for worthy student organizations as approved by the Board of Trustees on recommendation of the Student Council.

Books, instruments, and instructional supplies may cost from \$25 to \$50 a term.

LIVING ACCOMMODATIONS

FOR MEN

Approximately 2,000 spaces are available in the men's Residential Halls. These rooms are in permanent dormitories and accommodate one, two, or three persons. All rooms are completely furnished, including bedding and bed linen. The range of prices is from \$248 to \$355 a year. Application for rooms will be accepted after January 1 for the following academic year and after October 1 for the semester beginning in February. *A prospective student should not assume that admission to the University automatically reserves a space for him in the dormitories, and it is not necessary to wait until actual admission before applying for a room.* A form for filing application will be furnished, on request, by the Director of Residential Halls, Edmund Ezra Day Hall, Cornell University, Ithaca, New York.

No dining rooms are operated in the men's Residential Halls, but meals are obtainable at any of the cafeterias or dining rooms on the campus, or in the restaurants and cafeterias within the city. From \$12 to \$16 a week is the minimum allowance recommended for meals, and some students spend more than that.

Off-campus housing may be obtained in private homes and rooming houses. While most of these are on East Hill and adjacent to the campus, some are downtown. Prices of off-campus accommodations range, in general, from \$6 to \$10 weekly for single rooms, and from \$10 to \$14 weekly for double rooms. The number of privately owned homes that offer both room and board is few, and the majority of students who live in private homes utilize the same eating places as outlined for use of men living in Residential Halls.

The University publishes each year a list of off-campus residences that have been inspected and found to have good sanitary arrangements, adequate fire protection, and both satisfactory furniture and living conditions. If a student rents a room not on this list, he should make sure, through personal inspection, that these requirements are satisfactory.

Students planning to live off-campus are advised to come to Ithaca prior to registration to complete room arrangements. Students are usually requested to sign contracts for the full college year, and the details of such agreements should be clearly understood at the outset.

Inquiries on off-campus housing should be addressed to the Off-Campus Housing Office, Department of Residential Halls, Edmund Ezra Day Hall, Cornell University, Ithaca, New York.

THE CURRICULA

The two-year course has organized within it eight curricula giving preparation for the major types of farming in New York State and for certain allied business. A two-year student must select one of these curricula and follow closely the work outlined. Changes from these outlines may be made with the consent of the Director of Resident Instruction and the faculty adviser to whom the student will be assigned when he registers.

All two-year men students must register for the Basic Course in Military Science. Men and women are required to register for Physical Education. These courses are described in the *Announcement of the Independent Divisions and Departments*.

Requests for further information regarding these curricula should be addressed to L. H. Harden, in charge of admissions in the College of Agriculture, Roberts Hall, Ithaca, New York.

CURRICULUM IN DAIRY FARMING

FIRST YEAR

<i>Fall term</i>		<i>Hours credit</i>	<i>Spring term</i>		<i>Hours credit</i>
Extension Teaching 1 (Oral and Written Expression)	3		Extension Teaching 1 (Oral and Written Expression)	3	
Animal Husbandry 50 (Dairy Cattle)	4		Agronomy 2 (Introduction to Field Crops)	3	
Biochemistry 2 (Introductory Agricultural Chemistry)	5		Agronomy 6 (Soils)	3	
Military Science			Military Science		
Physical Education			Physical Education		
Agricultural Elective	3 or 4		Agricultural Elective	6	
Suggested:			Suggested:		
Agricultural Engineering 1			Agricultural Economics 140		
Agricultural Economics 2			Agricultural Engineering 103		
			Vegetable Crops 3		

SECOND YEAR

Animal Husbandry 10 (Livestock Feeding)	4	Agricultural Economics 102 (Farm Management)	5
Animal Husbandry 20 (Animal Breeding)	3	Veterinary 61 (Health and Diseases of Animals)	3
Animal Husbandry 1 (Introductory Livestock Production)	3	Animal Husbandry 150 (Dairy Cattle, Advanced Course)	3
Military Science		Military Science	
Physical Education		Physical Education	
Agricultural Elective	4 to 6	Agricultural Elective	4 to 6
Suggested:		Suggested:	
Agricultural Engineering 102		Agricultural Engineering 40	
Agricultural Engineering 40		Agricultural Engineering 42	
Agricultural Engineering 42		Botany 1	
Botany 1		Entomology 10	
Poultry Husbandry 1		Pomology 1	
		Poultry Husbandry 110	

CURRICULUM IN GENERAL LIVESTOCK FARMING

FIRST YEAR

<i>Fall term</i>	<i>Hours credit</i>	<i>Spring term</i>	<i>Hours credit</i>
Extension Teaching 1 (Oral and Written Expression)	3	Extension Teaching 1 (Oral and Written Expression)	3
Animal Husbandry 1 (Introductory Livestock Production)	3	Animal Husbandry 10 (Livestock Feeding)	4
Biochemistry 2 (Introductory Agricultural Chemistry)	5	Agronomy 6 (Soils)	3
Military Science		Military Science	
Physical Education		Physical Education	
Agricultural Elective	3 to 5	Agricultural Elective	6
Suggested:		Suggested:	
Agricultural Economics 2		Agricultural Engineering 103	
Agricultural Engineering 1		Agronomy 2	
		Animal Husbandry 60, 70	

SECOND YEAR

Animal Husbandry 20 (Animal Breeding)	3	Agricultural Economics 102 (Farm Management)	5
Animal Husbandry 80 (Sheep)	3	Veterinary 61 (Health and Diseases of Animals)	3
Poultry Husbandry 1 (Farm Poultry Meat Products)	3	Military Science	
Military Science		Physical Education	
Physical Education		Agricultural Elective	7 or 8
Agricultural Elective	3	Suggested:	
Suggested:		Animal Husbandry 50	
Agricultural Engineering 102		Entomology 10, 61	
Pomology 1		Vegetable Crops 3	

CURRICULUM IN POULTRY FARMING

FIRST YEAR

<i>Fall term</i>	<i>Hours credit</i>	<i>Spring term</i>	<i>Hours credit</i>
Extension Teaching 1 (Oral and Written Expression)	3	Extension Teaching 1 (Oral and Written Expression)	3
Agricultural Economics 2 (Agricultural Geography)	4	Veterinary 10 (Animal Physiology) ..	3
Agricultural Engineering 42 (Welding)	1	Bacteriology 3 (Agricultural Bacteriology)	3
Biochemistry 2 (Introductory Agricultural Chemistry)	5	Poultry 30 (Incubation and Brooding)	3
Poultry 1 (Farm Poultry)	3	Poultry 50 (Market Eggs and Poultry) ..	2
Military Science		Military Science	
Physical Education		Physical Education	
		Agricultural Elective	1 to 3

SECOND YEAR

Agricultural Engineering 40 (General Shop Work)	2	Agricultural Economics 102 (Farm Management)	5
Agricultural Economics 140 (Marketing)	3	Agricultural Engineering 1 (Farm Mechanics)	3
Poultry 20 (Breeds, Breeding, and Judging)	3	Poultry 10 (Poultry Nutrition)	3
Poultry 170 (Poultry Hygiene and Disease)	2	Military Science	
Rural Sociology 12 (Effective Community Living)	3	Physical Education	
Military Science		Agricultural Elective	4 or 6
Physical Education			
Agricultural Elective	2 or 3		

CURRICULUM IN FRUIT GROWING

FIRST YEAR

<i>Fall term</i>	<i>Hours credit</i>	<i>Spring term</i>	<i>Hours credit</i>
Extension Teaching 1 (Oral and Written Expression)	3	Extension Teaching 1 (Oral and Written Expression)	3
Botany 1	3	Botany 1	3
Biochemistry 2 (Introductory Agricultural Chemistry)	5	Agronomy 6 (Soils)	3
Pomology 1 (Tree Fruits)	3	Pomology 2 (Small Fruits)	3
Military Science		Military Science	
Physical Education		Physical Education	
Agricultural Elective	0 to 3	Agricultural Elective	3
Suggested:			
Agricultural Economics 2			
Animal Husbandry 1			
Poultry Husbandry 1			

SECOND YEAR

Pomology 111 (Handling and Storage of Fruits).....	3	Agricultural Economics 102 (Farm Management)	5
Agricultural Economics 142 (Marketing Fruits and Vegetables)....	4	Plant Pathology 1 (Elementary)....	3
Entomology 10 (Introductory Entomology)	3	Pomology 112 (Advanced Laboratory)	2
Agricultural Engineering 1 (Farm Mechanics)	3	Military Science	
Military Science		Physical Education	
Physical Education		Agricultural Elective	5 or 6
Agricultural Elective	3		

CURRICULUM IN VEGETABLE GROWING

FIRST YEAR

<i>Fall term</i>	<i>Hours credit</i>	<i>Spring term</i>	<i>Hours credit</i>
Extension Teaching 1 (Oral and Written Expression)	3	Extension Teaching 1 (Oral and Written Expression)	3
Botany 1	3	Agronomy 6 (Soils)	3
Biochemistry 2 (Introductory Agricultural Chemistry)	5	Military Science	
Military Science		Physical Education	
Physical Education		Agricultural Elective	9 or 10
Agricultural Elective	3 or 4	Suggested:	
Suggested:		Agricultural Engineering 1	
Agricultural Economics 2		Agronomy 2	
Poultry 1		Animal Husbandry 10	
Animal Husbandry 1		Pomology 1	
		Vegetable Crops 22	

SECOND YEAR

Vegetable Crops 11 (Commercial Vegetable Production)	4	Agricultural Economics 102 (Farm Management)	5
Vegetable Crops 12 (Post-Harvest Handling)	3	Agricultural Economics 147 (Marketing Institutions)	2
Military Science		Entomology 10 (Introductory Entomology)	3
Physical Education		Plant Pathology 1 (Elementary)	3
Agricultural Elective	9	Military Science	
Suggested:		Physical Education	
Agricultural Economics 142		Agricultural Elective	3
Animal Husbandry 1		Suggested:	
Pomology 111		Agricultural Engineering 42	
Poultry Husbandry 1		Animal Husbandry 50	
		Floriculture 2	

CURRICULUM IN GENERAL FARMING

FIRST YEAR

<i>Fall term</i>	<i>Hours credit</i>	<i>Spring term</i>	<i>Hours credit</i>
Extension Teaching 1 (Oral and Written Expression)	3	Extension Teaching 1 (Oral and Written Expression)	3
Agricultural Economics 2 (Agricultural Geography)	4	Agricultural Engineering 1 (Farm Mechanics)	3
Biochemistry 2 (Introductory Agricultural Chemistry)	5	Agronomy 2 (Introduction to Field Crops)	3
Military Science		Agronomy 6 (Soils)	3
Physical Education		Military Science	
Agricultural Elective	3	Physical Education	
Suggested:		Agricultural Elective3 or 4	
Animal Husbandry 1		Suggested:	
Poultry Husbandry 1		Pomology 1	
		Vegetable Crops 3	

SECOND YEAR

Animal Husbandry 10 (Livestock Feeding)	4	Agricultural Economics 102 (Farm Management)	5
Animal Husbandry 20 (Animal Breeding)	3	Agricultural Economics 140 (Marketing)	3
Animal Husbandry 50 (Dairy Cattle)	4	Military Science	
Military Science		Physical Education	
Physical Education		Agricultural Elective6 to 8	
Agricultural Elective3 to 6		Suggested:	
Suggested:		Agricultural Economics 126	
Agricultural Engineering 102		Agricultural Engineering 42, 103	
Botany 1		Botany 1	
		Entomology 10	
		Vegetable Crops 22	

CURRICULUM IN COMMERCIAL FLORICULTURE

Students who take this curriculum are expected to enroll in the six-week Summer Session at Cornell University between the first and second years. Tuition is charged in the Summer Session.

FIRST YEAR

<i>Fall term</i>	<i>Hours credit</i>	<i>Spring term</i>	<i>Hours credit</i>
Extension Teaching 1 (Oral and Written Expression)	3	Extension Teaching 1 (Oral and Written Expression)	3
Biochemistry 2 (Introductory Agricultural Chemistry)	5	Botany 1	3
Botany 1	3	Floriculture and Ornamental Horticulture 2 (Introduction to Landscape Design)	3
Floriculture and Ornamental Horticulture 1 (General)	3	Floriculture and Ornamental Horticulture 5 (Flower Arrangement) ..	2
Military Science		Agronomy 6 (Soils)	3
Physical Education		Military Science	
Agricultural Elective0 to 3		Physical Education	
Suggested:		Agricultural Elective0 to 3	
Agricultural Economics 2		Suggested: Agric. Engineering 21	
Agricultural Engineering 40			

SUMMER SESSION

Floriculture and Ornamental Horticulture 12 (Herbaceous Plant Materials)...	2
Botany 31 (Plant Physiology)	4

SECOND YEAR

Floriculture and Ornamental Horticulture 123 (Florist Crop Production)	4	Floriculture and Ornamental Horticulture 124 (Commercial Greenhouse Production)	3
Floriculture and Ornamental Horticulture 115 (Plant Propagation)..	3	Floriculture and Ornamental Horticulture 125 (Flower-Store Management)	2
Military Science		Entomology 10 (Introductory Entomology)	3
Physical Education		Plant Pathology 1 (Elementary)	3
Agricultural Elective	8 or 9	Military Science	
		Physical Education	
		Agricultural Elective	3

CURRICULUM IN NURSERY MANAGEMENT

Students who take this curriculum are expected to enroll in the six-week Summer Session at Cornell University between the first and second years. Tuition is charged in the Summer Session.

FIRST YEAR

<i>Fall term</i>	<i>Hours credit</i>	<i>Spring term</i>	<i>Hours credit</i>
Extension Teaching 1 (Oral and Written Expression)	3	Extension Teaching 1 (Oral and Written Expression)	3
Biochemistry 2 (Introductory Agricultural Chemistry)	5	Agromony 6 (Soils)	3
Botany 1	3	Botany 1	
Floriculture and Ornamental Horticulture 1 (General)	3	Floriculture and Ornamental Horticulture 2 (Introduction to Landscape Design)	3
Military Science		Military Science	
Physical Education		Physical Education	
Agricultural Elective	0 to 4	Agricultural Elective	2 to 5
Suggested:		Suggested:	
Agricultural Economics 2		Pomology 1	
Agricultural Engineering 42			

SUMMER SESSION

Floriculture and Ornamental Horticulture 12 (Herbaceous Plant Materials)...	2
Botany 31 (Plant Physiology)	4

SECOND YEAR

Plant Pathology 1 (Elementary)...	3	Floriculture and Ornamental Horticulture 13 (Woody-Plant Materials)	4
Entomology 10 (Introductory Entomology)	3	Floriculture and Ornamental Horticulture 117 (Commercial Nursery Management)	3
Floriculture and Ornamental Horticulture 115 (Plant Propagation)..	3	Military Science	
Military Science		Physical Education	
Physical Education		Agricultural Elective	8
Agricultural Elective	6	Suggested:	
		Rural Education 10	

Description of Courses

THE COURSES described in the following pages are those required in one or more of the preceding curricula. They are given by members of the staff of the College of Agriculture.

The administrative units of the College in charge of the various subject-matter fields are called *departments*. The work given in several of the departments is not required in these curricula, but the courses offered by them may be elected as time permits and if the prerequisites are met. For the description of these offerings, reference should be made to the Announcement of the four-year courses.

The arrangement of the courses in the foregoing curricula is such that prerequisites will have been met if the courses are taken in the order in which they are listed. One should consult the four-year Announcement for course prerequisites before making any change in the order of schedule.

AGRICULTURAL ECONOMICS

2. *AGRICULTURAL GEOGRAPHY*. Fall term. Credit four hours. Lectures, M W F 9 or 11. Warren 45. Discussions, W Th or F 2-4 or W or Th 7-9 p.m. Warren 345. Assistant Professor MELLOR.

Historical perspective on present-day agriculture; adjustment of agriculture to natural and to economic environment; crop and livestock production in New York State, the United States, and other countries; interregional trade in agricultural products.

102. *FARM MANAGEMENT*. Spring term. Credit five hours. Not open to first-year students. Lectures, M W F 10. Warren 45. Laboratory, T W Th or F 2-4. Warren 101. On days when farms are visited, the laboratory period is from 2-6. Professor WARREN.

A study of the organization and operation of the farm from the point of view of efficiency and continuous profit; farm records, farm business analysis, factors affecting profits, size of business, choice of enterprises, partnership arrangements, getting started in farming, planning the organization and management of specific farms. One all-day trip and five half-day trips are taken to visit farms in near-by regions.

126. *FARMERS' COOPERATIVES*. Spring term. Credit three hours. Lectures, M W 9. Warren 45. Discussion, W or Th 2-4. Warren 145. Assistant Professor CARPENTER.

What cooperatives are, what they have tried to do, and what they have done; their special problems of organization, finance, and control.

140. *MARKETING*. Fall and spring terms. Credit three hours. Lectures: fall term M W F 10; spring term M W F 11 except for weeks when field trips are taken, then M F lectures only. Warren 45. Field trips, T W or Th 1:30-5:30. Professor DARRAH.

A study of how farm products are marketed. Special attention is given to the consumption of farm products, the factors that affect consumption, production areas,

market channels, the operation of different marketing agencies, marketing services, and costs. One all-day and five half-day trips are taken to visit marketing agencies.

142. *MARKETING FRUITS AND VEGETABLES*. Fall term. Credit four hours. Lectures, M W F 9. Laboratory, W or F 2-4. Warren 245. Professor RASMUSSEN.

A study of the economic factors involved in the marketing of fruits and vegetables; regional and seasonal competition; areas of distribution; methods of handling; costs of marketing; types of marketing organizations; sales methods; transportation and carrier services; produce law and methods of credit ratings; terminal problems; aspects of retailer- and consumer-demand.

144. *MARKETING EGGS AND POULTRY*. Fall term. Credit two hours. Lecture and discussion, T Th 11. Warren 245. Professor DARRAH.

A detailed study of the marketing of poultry and eggs. Specific topics to be emphasized include the demand for poultry and eggs, price relationships, markets, salesmanship, interregional competition, and efficiency in marketing.

147. *MARKETING INSTITUTIONS*. Spring term. Credit two hours. Enrollment limited to 40. F 9. Warren 245. Professor BRUNK.

Economic functions performed by various types of specialized marketing agencies, with an emphasis on their physical operating patterns. Four days of spring vacation are spent in New York City inspecting and studying the marketing of dairy products, eggs, poultry, fruits, vegetables, livestock, and meat. Total cost of the trip need not exceed \$50 in addition to transportation to and from New York.

AGRICULTURAL ENGINEERING

1. *FARM MECHANICS*. Fall or spring term. Credit three hours. Lectures: T Th 10. Fall term, Stocking 218; spring term, Rice 300. Laboratory, M T W Th or F 2-4:30. Agricultural Engineering Laboratories. Professor JENNINGS and assistants.

A course planned to give training in understanding the farm application of mechanical methods and appliances and to develop ability to think and to reason in terms of these. It covers such farm equipment as pumps, water systems, plumbing, hoists and elevators, farm wiring and motors, refrigeration, and air fans.

102. *FARM POWER*. Fall term. Credit three hours. Prerequisite, course 1. Lectures, T Th 11. Rice 300. One recitation period a week, to be arranged. Laboratory, M T W or Th 2-4:30. Agricultural Engineering Laboratories. Professor TERRY.

A study of the principles of operation and adjustment of internal combustion engines and their farm applications. Principal emphasis on farm tractors, including care and operation, power transmission, power requirements, and economic factors.

103. *FIELD MACHINERY*. Spring term. Credit three hours. Prerequisite, course 1. Lectures, T Th 11. Stocking 218. One recitation period a week, to be arranged. Laboratory, M T W or Th 2-4:30. Agricultural Engineering Laboratories. Assistant Professor MILLIER.

A study of the use, care, operation, and adjustment of farm field machines. Machines in each of the major groups, tillage, seeding, harvesting, processing, spraying and dusting, fertilizing, and crop loading are included.

21. *FARM SURVEYING*. Spring term. Credit three hours. Prerequisite, Trigonometry. Lectures, M W 10. Stocking 119. Recitation, F 10. Laboratory, M T or W 2-4:30. Agricultural Engineering Research Laboratory, Tower Road. Assistant Professor LEVINE.

A study of the use and care of the simpler surveying equipment. Special emphasis is placed on its application to farm problems.

31. *FARM STRUCTURES*. Fall term. Credit three hours. Prerequisite, Inter-

mediate Algebra and Physics. Lectures, M W F 8. Stocking 218. Associate Professor GRAY and Assistant Professor LEVINE.

A course in the elementary problems of farm buildings; a study of basic structural requirements, insulation, ventilation, and functional requirements for farm animals.

40. *GENERAL FARM SHOP*. Fall or spring term. Credit two hours a term. Lecture, T 9. Stocking 119. Laboratory, M T or Th 1-5. Limited to thirty students a section. Agricultural Engineering Laboratories. Stocking 120. Professor FOSS.

A course designed to acquaint the student with the common woodworking, tool fitting, cold and sheet metal working, forging, welding, ropework, and wood-finishing jobs commonly found on the farm. The correct use of hand tools on new construction and repair work is emphasized.

42. *WELDING*. Fall or spring term. Credit one hour. One laboratory period, M T or Th 8-10:30, or M or T 2-4:30; in spring term, given also F 2-4:30. Limited to twenty students a section. Mr. CLOUGH.

A course giving fundamentals and practice of oxyacetylene welding and cutting of metals; spot welding and arc welding, with special emphasis on farm-shop construction and repair. One all-day field trip is taken on Monday or Tuesday.

AGRONOMY

2. *INTRODUCTION TO FIELD CROPS*. Spring term. Credit three hours. Discussion periods, W F 10. Caldwell 100. Laboratory, M T W Th or F 2-4:30. Caldwell 250. Professor HARTWIG.

A study of the culture of the common field crops that are produced in the North-eastern States, with emphasis on the practical aspects. Rotations with their seed and fertilizer requirements are worked out for three or four type-farms where the objective is to produce feed and food.

6. *SOILS*. Spring term. Credit three hours. Lectures, T Th 9. Caldwell 100. Laboratory, M T W Th or F 2-4:30. Caldwell 201. Assistant Professor LATHWELL.

A course dealing with the composition, properties, and plant relations of soils, with particular reference to the practical use of lime, fertilizers, and other means of maintaining soil fertility and of controlling soil erosion.

ANIMAL HUSBANDRY

1. *INTRODUCTORY LIVESTOCK PRODUCTION*. Fall term. Credit three hours. Lectures, M W 8 or 10. Wing A. Laboratory, T Th or F 2-4:30, W 11-1. Judging Pavilion. Assistant Professor SHEFFY and assistants.

A survey course that gives the student a concept of the scope of the animal industry, an insight into the opportunities it offers, and a perception of its fundamental problems. It includes the fundamentals of successful livestock production that form a foundation on which to build specialized knowledge and skill in succeeding courses. It should serve equally well for students majoring in other fields, who will take but one course in Animal Husbandry. Animals specifically covered are beef cattle, sheep, swine, and horses. Two scheduled evening prelims are given.

10. *LIVESTOCK FEEDING*. Fall or spring term. Credit four hours. Lectures: fall term, M W F 11; spring term, M W F 9. Wing A. Laboratory: fall term, Th or F 2-4:20, Wing A; spring term, M W Th or F 2-4:20. Wing C. Fall term, Assistant Professor WARNER and assistants; spring term, Professor S. E. SMITH and assistants.

The feeding of farm animals, including the general basic principles, feeding standards, the computation of rations, and the composition and nutritive value of livestock feeds.

20. *ANIMAL BREEDING*. Fall term. Credit three hours. Lectures, M W 9. Wing A. Recitation, demonstration, and laboratory, M T W Th or F 2-4:20. Wing C. Associate Professor R. W. BRATTON, Assistant Professor FOOTE, and assistants.

An introduction to the anatomy and physiology of reproduction and the improvement of farm animals through the application of genetics. Emphasis is placed on traits of economic importance to the livestock industry.

ANIMAL PHYSIOLOGY. (Veterinary 10). Spring term. Credit three hours. M W F 10. Veterinary college. Professor ———.

A course of lectures and demonstrations arranged especially for students of agriculture but open to others. Students taking this course should be familiar with the first principles of chemistry.

HEALTH AND DISEASES OF ANIMALS. (Veterinary 61). Spring term. Credit three hours. Lectures, M W F 11. Veterinary College. Professor GILMAN.

The course is designed to give the student a clear conception of the causes and nature of the diseases of animals, with suggestions for their prevention. Special attention is given to the methods of preventing the spread of infectious and epizootic diseases. Such information as is practicable is given for the treatment of slight injuries and for first aid in emergencies.

50. *DAIRY CATTLE*. Fall or spring term. Credit four hours. Lectures: fall term, T Th S 8; spring term, T Th S 10. Wing A. Laboratory: fall term, M 2-4:20 or S 9-11:20; spring term, M or Th 2-4:20. Wing A and Judging Pavilion. Professor TURK, Associate Professor SCHULTZ, and assistants.

This course deals with some of the economic aspects of the dairy industry; factors in breeding and development of dairy cattle; milking methods and milk-production problems; efficient feeding; and care, management, and health of the dairy herd. Practice in selection, herd management, formulation of rations, planning breeding programs, and keeping of records.

150. *ADVANCED DAIRY PRODUCTION*. Spring term. Credit three hours. Lectures, T Th 11. Lecture and discussion, T 2-4:20. Wing A. Professor TRIMBERGER.

Analysis of breeding and management programs in successful herds. Evaluation of the programs of dairy-cattle breed associations. Emphasis is placed on the application of the principles of dairy breeding, feeding, and management to the development and operation of a successful dairy farm.

60. *BEEF CATTLE*. Spring term. Credit three hours. Lectures, W F 10. Wing A. Laboratory, F 2-4:20. Judging Pavilion and Beef Cattle barn. Professor J. I. MILLER.

A general course in beef-cattle production. The management, feeding, breeding, selection, and marketing problems involved in the beef-cattle enterprise are emphasized. A one-day field trip is taken to study successful beef-production methods.

70. *SWINE*. Spring term. Credit three hours. Lectures, W F 11. Wing A. Practice, T 2-4:20. Judging Pavilion and Swine Barn. Professor J. P. WILLMAN.

A general course in the care, feeding, breeding, and management of swine. Lectures, recitations, and discussions; studies in swine selection; field trips and practical exercises in the handling and care of swine. A one-day field trip is taken.

80. *SHEEP*. Fall term. Credit three hours. Lectures, T Th 10. Wing A. Practice, M 2-4:20. Judging Pavilion and Sheep Barn. Professor J. P. WILLMAN.

A general course in the care, breeding, feeding, and management of the farm flock; feeding and fattening of lambs; practice in judging and handling of sheep and wool. Lectures, recitations, demonstrations, discussions, reports, and field trips intended to give students a practical knowledge of sheep production. A one-day field trip is taken.

90. *MEAT AND MEAT PRODUCTS*. Fall or spring term. Credit three hours. Lecture, M 8. Wing C. Laboratory, M T or W 1-5. Registration limited to sixteen students in each section. Assistant Professor NAUMANN.

A course in livestock slaughtering, retail meat cutting, live animal-carass relationships, and the storage and preservation of meat and meat products.

BACTERIOLOGY

3. *AGRICULTURAL BACTERIOLOGY*. Spring term. Credit three hours. Lectures, M W F 11. Stocking 218. Professor NAYLOR.

The basic principles of bacteriology and their applications in agriculture, industry, personal hygiene, and public health.

BIOCHEMISTRY

2. *INTRODUCTORY AGRICULTURAL CHEMISTRY*. Fall term. Credit five hours. Lectures and recitations, M W F 9, Plant Science 233; T Th 9, Caldwell 100. Associate Professor NEAL and assistants.

Lectures, demonstrations, and recitations dealing with the fundamental principles of chemistry and their application to agricultural practices. This course is not accepted as a prerequisite for further courses in Chemistry or Biochemistry.

BOTANY

1. *GENERAL BOTANY*. Fall and spring terms. Credit three hours a term. Lectures, T Th 9 or 11. Plant Science 233. One laboratory a week, M T W Th F 2-4:30; T 10-12:30, F or S 8-10:30, or S 9-11:30. Plant Science 240, 242, and 262. Professor BANKS, instructors, and assistants.

A survey of the fundamental facts and principles of plant life. The work of the first term deals with the structures and functions of the higher plants, with special emphasis on their nutrition. The work of the second term traces the evolution of the plant kingdom, as illustrated by representatives of the principal groups, and concludes with a brief introduction to the principles of classification of the flowering plants.

31. *PLANT PHYSIOLOGY*. Fall or spring term. Credit four hours. Lectures, T Th 10. Plant Science 143. Laboratory, T Th or W F 2-4:30, or M 2-4:30 and S 8-10:30. Plant Science 227. Professor D. G. CLARK.

This course is designed to acquaint the students with the general principles of plant physiology. Topics such as water relations, photosynthesis, translocation, digestion, respiration, mineral nutrition, growth, and reproduction are studied in detail. Particular emphasis is placed, both in laboratory and classroom, on the discussion of principles and their application to plants.

DRAWING

10. *DRAWING FOR LANDSCAPE STUDENTS*. Throughout the year. Credit three hours a term. W F 2-4:30. Mann 500. Associate Professor BURCKMYER and Mr. LAMBERT.

A course planned to develop (1) practical ability in the sketching of outdoor planting and landscaped features; (2) facility in lettering; (3) knowledge of isometric and perspective construction from plans and elevations. Sketch-book assignments, to be done outside of class, will be given throughout the year.

ENTOMOLOGY

10. *INTRODUCTORY ENTOMOLOGY*. Fall or spring term. Credit three hours. Lectures: fall term, W F 11; spring term, T Th 9. Comstock 245. Laboratory: fall term, W Th or F 2-4:30; spring term, M T W Th or F 2-4:30. Comstock 100. Professor WATKINS and assistants.

A survey of the structure, biology, and classification of insects; types of insect control and the major groups of insecticides, their formulation and application. Laboratory exercises on the anatomy and biology of insects, with practice in the identification of representative forms including many of the commoner species of economic importance.

61. *INTRODUCTORY BEEKEEPING*. Spring term. Credit two hours. Lectures, T Th 11. Comstock 245. Professor DYCE.

This course is intended to afford a general knowledge of the fundamentals of beekeeping, including the life history, instincts, and general behavior of honeybees. Special attention is given to the role of bees in the cross-pollination of agricultural crops, as well as production of honey and beeswax.

EXTENSION TEACHING

1. *ORAL AND WRITTEN EXPRESSION*. Throughout the year. Credit three hours a term. Lectures and practice: fall term, M W F 8 or 11 or T Th S 10; spring term, M W F 8, 9, or 11. Warren 231. Criticism by appointment, daily 8-5, and S 8-1. Associate Professors FREEMAN and MARTIN, and Messrs. LUEDER and ———.

Practice in oral and written presentation of topics in agriculture and other fields, with criticism and individual appointments on the technique of public speech. Designed to encourage interest in public affairs, and, through demonstrations and the use of graphic materials and other forms, to train for effective self-expression in public. Special training is given to competitors for the Eastman Prizes for Public Speaking and the Rice Debate Stage. In addition, some study is made of representative work in English literature. Part of the work in the second term is a study of parliamentary practice.

FLORICULTURE AND ORNAMENTAL HORTICULTURE

1. *GENERAL FLORICULTURE AND ORNAMENTAL HORTICULTURE*. Fall term. Credit three hours. Lectures, M W 10. Plant Science 37. Laboratory, T W or Th 2-4. Plant Science 15. Professor MACDANIELS and Mr. ———.

An elementary course covering the principles and practices of growing ornamental plants in the garden, greenhouse, and home.

2. *INTRODUCTION TO LANDSCAPE DESIGN*. Spring term. Credit three hours. Lecture, M W F 9. Plant Science 233. Associate Professor PORTER.

A consideration of the principles of landscape design as applied to the small-residence property.

5. *FLOWER ARRANGEMENT*. Fall or spring term. Credit two hours. Fall term: lecture, M 10, Plant Science 141; laboratory, M or T 2-4:30, or W 10-12:30, Plant Science 22. Mrs. Fox. Spring term: lecture, T 10, Plant Science 37; laboratory, T or W 2-4:30, or Th 10-12:30. Plant Science 22. Mr. Fox.

A study of the principles and methods of arranging flowers and other plant materials for decorative use in the home and for exhibition.

12. *HERBACEOUS PLANT MATERIALS*. Spring term. Credit three hours. Lectures, T Th 8. Plant Science 37. Laboratory, W 10-12:30 or 2-4:30. Plant Science 15. Assistant Professor LEE.

A study of the ornamental herbaceous plants used in landscape and garden plantings. Emphasis is placed on the identification, use, and culture of spring-flowering bulbs and perennials.

13. *WOODY-PLANT MATERIALS*. Spring term. Credit four hours. Lectures, T Th 9. Plant Science 37. Laboratory and field trips, M and W or F 2-4:30. Plant Science 29. Associate Professor CORNMAN.

A study of the trees, shrubs, and vines used in landscape planting. Emphasis is placed on their characteristics and values for use as landscape material. The class visits Rochester parks.

115. *PLANT PROPAGATION*. Fall term. Credit three hours. Prerequisite, courses 12 and 13 and Botany 31 or the equivalent, or permission of the instructor. Lectures, T Th 8. Plant Science 37. Laboratory, Th 2-4:30. Greenhouses and nurseries. Associate Professor SNYDER.

A study of the principles and methods involved in the propagation of woody and herbaceous plants by seeds, division, layers, cuttings, budding, and grafting. The class visits nurseries at Geneva and Newark, New York.

117. *COMMERCIAL NURSERY MANAGEMENT*. Spring term. Credit three hours. Lectures, T Th 11. Plant Science 37. Laboratory, T 2-4:30. Greenhouses and nurseries. Professor PRIDHAM.

A course supplementary to 115 dealing with the problems of the commercial propagation and growing of nursery plants. Pruning, digging, storage, and packaging of nursery stock are considered. Trips are made to near-by commercial nurseries.

119. *PLANTING AND MAINTENANCE OF ORNAMENTAL PLANTS*. Fall term. Credit three hours. Lectures, T Th 11, Plant Science 37. Laboratory, T 2-4:30, Greenhouses and nurseries. Professor PRIDHAM.

A study of the principles and practices employed in the maintenance of ornamental plants, including soil relationships, planting, watering, cultivation, pruning, and winter protection of landscape plant materials in garden and park planting. Both woody and herbaceous materials are considered. Field problems and observational trips are conducted.

123. *FLORIST-CROP PRODUCTION*. Fall term. Credit four hours. Lectures and recitations, M W F 9. Plant Science 37. Laboratory, M 2-4:30, Greenhouses. Professor Post.

A comprehensive study of the application of basic science to the culture of ornamental plants, particularly under greenhouse conditions. A trip is made to greenhouses in Rome and Utica, New York.

124. *COMMERCIAL GREENHOUSE PRODUCTION*. Spring term. Credit three hours. Lectures, M W 9. Plant Science 37. Laboratory, W 2-4:30. Greenhouses. Assistant Professor ANDREASEN.

A course supplementary to course 123 dealing with the commercial production of florist crops; emphasis is upon the practical problems concerned. Several trips are made to near-by commercial greenhouses.

125. *FLOWER-STORE MANAGEMENT*. Spring term. Credit two hours. Prerequisite, permission to register. Lecture, W 11. Plant Science 37. Laboratory, M 2-4:30. Plant Science 22. Mrs. Fox.

Lectures devoted to flower-shop management, business methods, merchandising, and marketing of floricultural commodities. Laboratories to include the application of subject matter and the principles of commercial floral arrangement and design. A trip made to New York City includes the flower shops, retail florist establishments, and the New York Flower Market.

PLANT PATHOLOGY

1. *ELEMENTARY PLANT PATHOLOGY*. Fall or spring term. Credit three hours. Lecture, Th 11, Plant Science 336, Laboratory and conferences, T Th, T F, W Th, or W F 2-4:30. Plant Science 341, 343, and 362. Associate Professor BOOTHROYD and Assistant Professor ROBERTS.

An introductory course dealing with the nature, cause, and control of disease in plants. Some of the more common diseases of cultivated crops are studied in the laboratory.

POMOLOGY

GENERAL HORTICULTURE. (See Vegetable Crops 3.) Those who want a general course in horticulture covering flowers, fruits, and vegetables should take this course.

1. *TREE FRUITS*. Fall or spring term. Credit three hours. Should be preceded or accompanied by elementary courses in botany and chemistry. Lectures, T Th 8. Plant Science 233. Laboratory, T or W 2-4:30. Plant Science 107. Fall term: Associate Professor EDGERTON; spring term: Professor SMOCK.

A study of the general principles and practices of tree-fruit culture and their relation to the underlying sciences. Topics to be covered include propagation, varieties, orchard management, and growth and fruiting habits. Practical work is presented in grafting, pruning, site and soil selection, and planting.

2. *SMALL FRUITS*. Spring term. Credit three hours. Lectures, T Th 8. Plant Science 143. Laboratory, Th 2-4:30. Plant Science 107. Professor BOYNTON.

A study of the general principles and practices in the culture of grapes, strawberries, brambles, and bush fruits and their relation to the underlying sciences. Fruiting and growth habits are covered, with practical work in pruning, planting, and propagation.

111. *POST-HARVEST PHYSIOLOGY, HANDLING, AND STORAGE OF FRUITS*. Fall term. Credit three hours. Prerequisite, course 1 or 2. Lectures, T Th 8. Plant Science 143. Laboratory, Th or F 2-4:30. Plant Science 107. Professor SMOCK.

The chemistry and physiology of fruits as they affect quality and marketability are studied. Handling methods, maturity indices, and storage practices are considered. Practical work involves grading and inspection of fruits and storage of fruit in different ways. One Saturday field trip is required.

112. *ADVANCED LABORATORY COURSE*. Spring term. Credit two hours. S 8-1. Plant Science 107. Intended for students doing their major work in pomology. Professors HOFFMAN and BOYNTON and Associate Professor EDGERTON.

This course is designed to give more extended practice in the various orchard operations than can be given in course 1. Special attention is given to problems of pruning, grafting, orchard-soil selection, and management, pollination, and spray practices. One or two field trips extending into the afternoon are made.

121. *ECONOMIC FRUITS OF THE WORLD*. Fall term. Credit three hours. Prerequisite, course 1. Given in alternate years. Lectures: M W F 8. Plant Science 114. Professor BOYNTON.

A study of all species of fruit-bearing plants of economic importance, such as the date, the banana, the citrus fruits, the nut-bearing trees, and the newly introduced fruits, with special reference to their cultural requirements in the United States and its insular possessions. All fruits not considered in other courses are considered here. The course is designed to give a broad view of world pomology and its relationship with the fruit industry of New York State.

POULTRY HUSBANDRY

1. *FARM POULTRY*. Fall term. Credit three hours. Lectures, M W F 10. One recitation period, to be arranged. Rice 300. Professor HALL, assisted by other members of the staff.

A general course dealing with the practical application of the principles of poultry husbandry to general farm conditions.

10. *POULTRY NUTRITION*. Spring term. Credit three hours. Lectures, T Th 9. Rice 101. Laboratory, Th or F 2-4. Rice 305. Professor HEUSER.

The principles of poultry nutrition and their application to poultry-feeding management.

20. *POULTRY BREEDS, BREEDING, AND JUDGING*. Fall term. Credit three hours. Lecture or recitation, T Th 10. Rice 101. Laboratory, T or W 2-4. Judging Laboratory. Professor HALL.

Selecting and judging birds for production and breed characters; origin, history, and classification of breeds; introduction to breeding.

30. *INCUBATION AND BROODING*. Spring term. Credit three hours. Lectures, T Th 10. Laboratory, M or T 2-4. Rice 101. Assistant Professor KING.

Principles of incubation and brooding of domestic and game birds; problems of hatchery management.

50. *MARKET EGGS AND POULTRY*. Spring term. Credit two hours. Lecture, T 11. Laboratory, T W or Th 2-4. Rice 101. Professor HALL.

A detailed study of the interior and exterior qualities of eggs, abnormalities, egg grades, and standards; practice in candling, grading, and packing. Grades and standards of market poultry; killing, dressing, and packing. General market information. A one-day field trip is taken.

170. *POULTRY HYGIENE AND DISEASE*. Fall term. Credit two hours. Lectures and laboratory, Th 2-4:30. Moore Hall. Associate Professor PECKHAM.

The course deals with the nature of the infectious and parasitic diseases of poultry and with the principles of hygiene applicable to poultry farming for the prevention and control of diseases.

RURAL EDUCATION

10. *PSYCHOLOGY*. Fall or spring term. Credit three hours. Fall term: M W 10; spring term: T Th 10, and one hour to be arranged. Plant Science 233. Associate Professor AHMANN.

Consideration of the outstanding psychological concepts that bear upon personal problems and social relationships.

RURAL SOCIOLOGY

12. *EFFECTIVE COMMUNITY LIVING*. Fall or spring term. Credit three hours. M W F 11-12:20. Warren 131. Associate Professor REEDER.

This course is primarily concerned with helping students to acquire the kinds of understanding, skills, and attitudes that are essential in functioning effectively as members of a rural community. Students practice organization skills in the solution of laboratory problems. Principles are emphasized in relation to their application.

VEGETABLE CROPS

11. *COMMERCIAL VEGETABLE PRODUCTION*. Fall term. Credit four hours. Lectures, M W F 11. East Roberts 222. Laboratory W or F 2-4:30. East Roberts 301. Professor SWEET.

Intended for the student who wishes to specialize in commercial vegetable growing, whether the vegetables are for the fresh market or for processing. A study of the general principles of vegetable growing. Consideration is also given to the economic importance, cultural requirements, marketing, and storage of important vegetables. Field trips are required.

3. *GENERAL HORTICULTURE*. Spring term. Credit four hours. Lectures, M W F 8. Plant Science 233. Laboratory, M T W or F 2-4:30. East Roberts 301. Professor PRATT.

An introductory course in general horticulture, including flower, fruit, and vegetable growing. Intended primarily for students who want a general knowledge but do not plan to specialize in any one of these fields.

22. *POTATO PRODUCTION AND PROCESSING*. Spring term. Credit three hours. Lectures, T Th 10. East Roberts 222. Laboratory, T or W 2-4:30. East Roberts 223. Professor ORA SMITH.

General principles and practical phases of potato production, storage, and processing are discussed. Growth processes and soil and environmental factors are emphasized as influencing production. Topics such as storage methods, grading, packaging, cooking quality, nutritive value, processing, and industrial uses of potatoes also are studied. Two field trips, one of which is all day, are taken to potato farms and processing plants.

12. *POST-HARVEST HANDLING OF VEGETABLE CROPS*. Fall term. Credit three hours. Lectures, T Th 11. East Roberts 222. Laboratory, T or W 2-4:30. East Roberts 223. Professor HARTMAN.

Horticultural aspects of marketing vegetables; vocational opportunities in the field; methods of estimating and measuring quality and grade; research results and practices in packing, storing, transporting, and selling. One two-day and three afternoon trips are required. Estimated partial cost of transportation to be collected from the student, \$2.